Listing of Claims

Please amend the claims as listed below.

1. (Cancelled).

2. (Cancelled).

3. (Cancelled).

4. (Cancelled).

5. (Cancelled).

6. (Cancelled).

7. (Cancelled).

8. (Cancelled).

9. (Cancelled).

10. (Cancelled).

11. (Cancelled).

12. (Cancelled).

13. (Presently Amended) A method, comprising:

resolving an IP address of an access point in a new subnetwork when a mobile station is in a current subnetwork;

obtaining pre-authentication for the mobile station to work over the current and new subnetworks using said IP address;

~~The method of claim 6,~~

wherein said access point in the new subnetwork does not support higher-layer pre-authentication and communicates with the mobile station via a proxy agent and said IP address is of said proxy agent.

14. (Original) The method of claim 13, wherein the proxy agent uses the MAC address of the mobile station.

15. (Original) The method of claim 13, wherein said access point in the new subnetwork communicates IEEE 802.1X frames to the mobile station via the proxy agent.

16. (Original) The method of claim 13, wherein the mobile station's MAC address is carried in a payload of higher-layer packets.

17. (Cancelled).

18. (Cancelled).

19. (Cancelled).

20. (Cancelled).

21. (Cancelled).

22. (Presently Amended) A method, comprising:

resolving an IP address of an access point in a new subnetwork when a mobile station is in a current subnetwork; and

obtaining pre-authentication for the mobile station to work over the current and new subnetworks using said IP address;

wherein said access point in the new subnetwork supports higher-layer pre-authentication and communicates with the mobile station;

wherein the said access point in the new subnetwork communicates with the mobile remote station by using a higher-layer protocol that carries 802.1X frames; and

~~The method of claim 18,~~

further including using a newly defined protocol to carry 802.1x frames over a reliable transport.

23. (original) The method of claim 22, wherein the reliable transport uses TCP.

24. (Cancelled).

25. (Cancelled).

26. (Cancelled).

27. (Cancelled).

28. (Cancelled).

29. (Cancelled).

30. (Cancelled).

31. (Presently Amended) A method comprising,

reducing handoff delay of a mobile station by pre-establishing higher-layer contexts prior to handoff based on higher-layer pre-authentication, and

~~The method of claim 24,~~

further including using a single higher-layer authentication protocol for pre-establishing a plurality of the higher-layer contexts.

32. (Original) The method of claim 31, further including using IKE or IKEv2 for pre-establishing a plurality of the higher-layer contexts.

33. (Original) The method of claim 31, further including using PANA and IKE or IKEv2 for pre-establishing a plurality of the higher-layer contexts.

34. (Presently Amended) A method comprising,

reducing handoff delay of a mobile station by pre-establishing higher-layer contexts prior to handoff based on higher-layer pre-authentication, and

~~The method of claim 24,~~

further including establishing an IPsec tunnel between the mobile station and an access point in a new subnetwork for redirecting traffic for a pre-configured IP address of the mobile station to a currently attached subnetwork.

35. (Cancelled).

36. (Presently Amended) A method for performing a handoff of a mobile station between access points in different access networks with minimal interruption and with maintained security, comprising:

pre-establishing higher-layer contexts for the mobile station prior to handoff and securely redirecting traffic originated from or destined for a pre-established IP address to a new access network, and

~~The method of claim 35,~~

further including establishing an IPsec tunnel between

the mobile station and an access router in the new access network, where an IPsec tunnel inner address is bound to the pre-established IP address.

37. (Presently Amended) A method for performing a handoff of a mobile station between access points in different access networks with minimal interruption and with maintained security, comprising:

pre-establishing higher-layer contexts for the mobile station prior to handoff and securely redirecting traffic originated from or destined for a pre-established IP address to a new access network, and

~~The method of claim 35,~~

wherein an access router in the new access network is used as a temporal home agent with which a client device registers its pre-established IP address as a home address and the IP address assigned in a physically attached network as the care-of address.

38. (Cancelled).

39. (Cancelled).

40. (Cancelled).

41. (Cancelled).

42. (Cancelled).

43. (Cancelled).

44. (Cancelled).

45. (Cancelled).

46. (Cancelled).

47. (Presently Amended) A method comprising:

performing a virtual soft handoff of a mobile device between access points in proximate networks or subnetworks to minimize communication interruption by allowing the mobile device to send and receive packets from a new one of said access points prior to handoff, and

~~The method of claim 44,~~

further including controlling a layer-2 handoff timing by a higher layer so that pre-authentication and pre-configuration can be completed prior to starting layer-2 handoff.

48. (Presently Amended) A method comprising:

performing a virtual soft handoff of a mobile device between access points in proximate networks or subnetworks to

minimize communication interruption by allowing the mobile device to send and receive packets from a new one of said access points prior to handoff, and

~~The method of claim 44,~~

further including using an IPsec tunnel for traffic redirection during a virtual soft-handoff, with outer and inner IP addresses of a device for the IPsec tunnel being a care-of address in the current subnet and the care-of address in a new subnet, respectively.

49. (Original) The method of claim 48, further including deleting the established IPsec tunnel prior to performing a layer-2 handoff.

50. (Presently Amended) A method comprising:

performing a virtual soft handoff of a mobile device between access points in proximate networks or subnetworks to minimize communication interruption by allowing the mobile device to send and receive packets from a new one of said access points prior to handoff, and

~~The method of claim 44,~~

further including using an IPsec tunnel for all traffic.

51. (Original) The method of claim 50, further including deleting an established IPsec tunnel prior to performing a layer-2 handoff.

52. (Cancelled).

53. (Cancelled)

54. (Cancelled)

55. (Cancelled).

56. (Cancelled).

57. (Cancelled).

58. (Cancelled).

59. (Cancelled).

60. (Cancelled).